1. SOKOV'YEV, V. A.

2. USSR (600)

4. Irrigation

7. Experience with spring flood irrigation of meadows and arable lands beyond the Volga. Gidr. i mel. 5 no.2, 1953

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

1. SOLOV'YEV, V. A.

2. USSR (600)

4. Irrigation - Caspian Depression

7. Irrigation cycle for natural meadows in local storage basins of the Caspian Depression, Gidr. i mel., 5, no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

PETROV, Yevgeniy Grigor'yevich; SOLOV'YEV, V.A., CHERNYKH, A.A.; ORLOVA, V.P., redaktor; GUREVICH, M.M., tekhnicheskiy redaktor.

[Snow water irrigation and the accumulation of moisture] Limannoe oroshenie i vlagonakoplenie. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1956. 165 p. (MLRA 10:6)

(Irrigation)

SOLOV'YEV, V.A., kand.sel'skokhozyaystvennykh nauk

Increased production by using irrigation in the trans-Volga region.
Zemledelie 23 no.11:16-19 N '61. (MIRA 14:11)
(Volga Valley--Irrigation farming)

SOLOV'YEV, V.A., kand. sel'skokhoz. nauk (Saratov)

Irrigated lands as an important source for increasing meat production in the Volga region. Gidr. i mel. 14 no.7:62-63 Jl '62.(MIRA 17:2)

ACC NR: AT6018526 SOURCE CODE: UR/0181/66/008/006/1683/1689

AUTHOR: Lyubov, B. Ya.; Solov'yev, V. A.

ORG: Central Scientific-Research Institute of Ferrous Metallurgy im. I. P. Bardin, Moscow (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: Kinetics of disintegration of dislocation cracks on the polygonal walls of edge dislocations

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1683-1689

TOPIC TAGS: crystal dislocation phenomenon, crystal defect, crack propagation, metastable state, surface property, relaxation process, brittleness, hardening

ABSTRACT: The authors analyze the decay of metastable dislocation cracks on polygonal walls of edge dislocations, the decay being the result of diffusion over the surface of the crack. It is pointed out in the introduction that formation of dislocations along one side of a crack is energetically favored and that the diffusion on the surface of the crack is the more likely mechanism of disappearance of dislocation cracks at low temperatures. The time evolution of the diffusion of the atoms over the surface of the crack from the base of the crack, which is under compression, into the mouth of the crack, which is under tension, is described and the dislocation distribution produced during such an evolution is calculated. The decrease in volume accompanying the crack disintegration is also calculated as well as the relaxation times characterizing the process. It is concluded that dislocation cracks should

Card 1/2

SOLOV'YEV, V. A.

Method of determination of the resistance of Mycobacterium tuberculosis to antibiotics. Probl. tuberk., Moskva no. 3:31-33 May-June 1952. (CLML 22:4)

1. Of the Bacteriological Laboratory (Scientific Supervisor -- Prof. P. N. Kashkin), Leningrad Institute for Surgical Tuberculosis (Director -- Prof. P. G. Kornev, Active Member AMS USSR).

SOLOV'EV, V.A., Cand Med Sci -- (diss) "Intercostal subpleural anasthesia in lung operations." Len, 19[illegible], 16 pp (First Len Med Inst im Academician I.P. Pavlov) 200 copies (KL, 26-59, 132)

SOLOV'YEV, V.A.

Experimental data on the use of intercostal anesthesia in surgery of organs of the thoracic cavity. Vest.khir. 82 no.4:85-90 Ap '59. (MIRA 12:6)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof.F.G. Uglov) i kafedry operativnoy khirurgii i topograficheskoy anatomii (zav. - prof.M.A.Sreseli) 1-go Leningradskogo meditsinskogo inst. im.I.P.Pavlova (Leningrad, ul.L.Tolstogo, 6/8).
(LOCAL ANESTHESIA) (CHEST--SURGERY)

SOLOV'YEV, V.A.

Operation on the lungs with the application of intercostal subpleural anesthesia. Vest.khir. 83 no.8:115-121 Ag '59. (MIRA 13:1)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov) 1-go Leningradskogo meditsinskogo instituta im. akad. I.P. Pavlova). Adres avtora: Leningrad, ul. L. Tolstogo, d.6/8, gospital'naya khirurgicheskaya klinika 1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.

(LUNGS surg.)
(ANESTHESIA, LOCAL)

SOLOV'YEV, V. A.

Drug resistance of mycobacteria tuberculosis in osteoarticular tuberculosis. Probl. tub. no.2:91-93 '62. (MIRA 15:2)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza (dir. - deystvitel'nyy chlen AMN SSSR prof. P. G. Kornev)

(DRUGS—PHYSIOLOGICAL EFFECT)
(MYCOBACTERIUM TUBERCULOSIS)

SOLOV'YEV, V. A., kand. biologicheskikh nauk

Significance of specific allergy in the pathogenesis of tuberculosis. Probl. tub. 40 no.4:65-71 '62. (MIRA 15:6)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza (dir. - prof. D. K. Khokhlov, nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. P. G. Kornev)

(TUBERCULOSIS) (ALLERGY)

SOLOV'YEV, V. A.

USSR/Meteorological Research Mar 1947
Rain

"Contemporary Viewpoints on the Formation of Rain," V. A. Solov'yev, 5 pp

"Priroda" No 2

Discusses the formation of precipitation as a result of the formation of ice particles in clouds and supplants Keller's theory that rain is caused primarily by means of water-bearing clouds. Solov'yev discusses both Findeisen's theory of the formation of rain out of Cumulo-nimbus and Berzherons theory of the formation of rain as a result of clouds generated at the division of two air masses.

ID 54762

SOLOV'EV, V. A.

Meteorology - Biography

Nikolay Nikolayevich Kalitin. Met. i gidrol, No. 3, 1949.

Monthly List of RussianAccessions, Library of Congress, November 1952. UNCLASSIFIED.

SOLOV'YEV, V.A.

A.I.Voeikov and current problems of climatology; materials of the meeting of the scientific council of the Main Geophysical Observatory devoted to the memory of A.I.Voeikov. Izv.AN SSSR Ser.geofiz. no.6:739-743 Je '56. (MLRA 9:9)
(Voeikov, Aleksandr Ivanovich, 1842-1016)

36-58-5/12

AUTHOR: Solov'yev, V. A.

TITLE: A Method for Measuring the Sizes and Charges of Fog Droplets (Ob odnom metode izmereniy zaryadov i razmerov kapel' tumanov)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatorii, 1956, Nr 58, pp 31-41 (USSR)

ABSTRACT: The author describes a device, essentially an ultramicroscope, developed by a group of Soviet scientists for measuring the sizes and charges of fog droplets. The instrument operates on the principle that a freely falling charged fog droplet moves along a zigzag-shaped path within an electrical field, constant in size but varying in direction. The vertical and horizontal components of the speed of the moving droplet may be determined by the length, amplitude, and period of the zigzag, and its radius and charge, respectively, by the magnitudes of the vertical and horizontal components of its rate of speed. The instrument described is a model perfected by the author and his associates in 1954, and is based on an instrument built in the workshops of the Main Geophysical Observatory in 1948. Its design was developed

Card 1/2

NIKANDROV, V.Ya., kand.fiz.-mat.nauk, red.; SHISHKIN, N.S., doktor fiz.-mat. nauk, red.; SHIFRIN, K.S., doktor fiz.-mat.nauk, red.; SOLOV'YEV, V.A., kand.fiz.-mat.nauk, red.; PISAREVSKAYA, V.I., red.; SOLOVEYCHIK, A.A., tekhn.red.

[Investigations of clouds, precipitation, and thunderstorm electricity] Issledovanie oblakov, osadkov i grozovogo elektrichestva; sbornik dokladov V Mezhvedomstvennoi konferentsii po voprosam issledovaniia oblakov, osadkov i grozovogo elektrichestva. Leningrad, Gidrometeor. izd-vo, 1957. 214 p. (MIRA 11:6)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby.
(Clouds) (Atmospheric electricity)
(Precipitation (Meteorology))

GANDIN, L.S.; DUBOV, A.S.; SOLOV'YEV, V.A.

In the Voeikov Main Geophysical Observatory. Meteor. i gidrol. no.8:70-72 Ag '57. (MLRA 10:8)

(Meteorology)

SOLOV'YEV, V.A., kandidat fiziko-matematicheskikh nauk.

What is electroclimate? Priroda 46 no.6:73-76 Je '57. (MLRA 10:7)

1. Glavnaya geofizicheskaya observatoriya im. A.I. Voyeykova, Leningrad
(Atmospheric electricity) (Air, Ionized)

MAKHOTKIN, L.G.; SOLOV'YEV, V.A.

Role of electric charge in the coagulation of fog droplets. Trudy GGO no.73:116-122 '58. (MIRA 11:9)
(Atmospheric electricity) (Fog)

MAKHOTKIN, L.G., SOLOV'YEV, V.A.

Electrical characteristics of the atmosphere during fogs. Trudy GGO no.97:63-86 '60. (MIRA 13:8)
(Atmospheric electricity) (Fog)

S/196/62/000/022/005/007
E194/E155

AUTHORS: Makhotkin, L.G., and Solov'yev, V.A.

TITLE: Electrical characteristics of the atmosphere during fog

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.22, 1962, 29, abstract 22 E 199. (In collection: "Issled. oblakov, osadkov i grozovogo elektrichestva" ('Investigations of clouds, precipitation and atmospheric electricity'), Moscow, AN SSSR, 1961, 219-224).

TEXT: In fog, when the electrical properties of the atmosphere are significantly different from normal, the potential gradient is greater, the air conductivity is much reduced and the concentration of light ions is lower. Until recently, few detailed results of observations made during fog have been available. The significance of theoretical calculations made in the Laboratoriya aerozoley (Aerosol Laboratory) of the Fiziko-khimicheskiy institut imeni Karpova (Physicochemical Institute imeni Karpov) twenty years ago was recently evaluated and the

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conclusions previously obtained were repeated in a number of works. The importance of the formulae is not that they replace measurements by calculations, but that they serve to check the correctness and completeness of description of micro-processes in fog, and establish general assessments and relationships between the various characteristics. The meteorological characteristic of visibility range may be associated with the atmospheric electrical characteristic of light ion concentration. Experimental data concerning the charges on fine drops of fog are in good agreement with experimental results measured in clouds on the mountain Elbruss by a completely different method. 9 references.

[Abstractor's note: Complete translation.]

Card 2/2

ACCESSION NR: AT4030534 S/0000/63/000/000/0115/0122

AUTHOR: Solov'yev, V. A.

TITLE: On the possibility and perspective of providing storm activity information to operational service for aviation

SOURCE: Nauchnaya konferentsiya po aviatsionnoy meteorologii. Moscow 1960. Materialy*. Moscow, Gidrometeoizdat, 1963, 115-122

TOPIC TAGS: storm center, lightning, cathode direction finder, air temperature, meteorological observatory, upper atmosphere, cloud

ABSTRACT: This paper is one of 13 previously unpublished reports of the 40 papers given at the Nauchnaya konferentsiya po voprosam aviatsionnoy meteorologii (scientific conference on problems of aviation meteorology) that was held in June and July of 1960 in Moscow at the Glavnoye upravleniye gidrometeorologicheskoy sluzhby* SSSR. The author stated that danger to aircraft from storm activity still exists. A graph was presented showing the number of aircraft destroyed by lightning. Of those catastrophes, more than half occurred at altitudes of 3-4 km with air temperatures of about 0°. Maps were presented showing storm center locations at particular times, in Europe, the Middle East, and the Far East. Storm activity data from various

Card 1/2

SOLOV'YEV, V.A.

"The significance of atmospheric electricity measurement."

Report submitted to the Third Intl. Conf. on Atmospheric and Space Electricity, Montreaux, Switzerland May 1963

SKLYAROV, V.M., otv. red.; GRIBANOV, N.N., red.; MUROMTSEV, A.M., red.; POGOSYAN, Kh.P., red.; PROTOPOPOV, V.S., red.; RUDNEV, G.V., red.; SOKOLOV, A.A., red.; SOLOV'YEV, V.A., red.; USMANOV, R.F., red.; ZHDANOVA, L.P., red.; RUSAKOVA, G.Ya., red.; CHEPELKINA, L.A., red.; KOLESOVA, Z.M., tekhn.red.

[Man and the elements; hydrometeorologic desk calendar for 1964] Chelovek i stikhiia; nastol'nyi gidrometeorologicheskii kalendar' 1964. Leningrad, Gidrometeorologicheskoe izd-vo, 1963. 154 p. (MIRA 17:2)

L 8444-66 EWT(m)/EWA(h)

ACC NR: AP5025706 SOURCE CODE: UR/0286/65/000/018/0057/0057

AUTHORS: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A. 55 48 13

ORG: none

TITLE: A device for checking radiation meters. 19.55 Class 21, No. 174729

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 57

TOPIC TAGS: radiation monitor, radiometry, radiometer, filter, mercury

ABSTRACT: This Author Certificate presents a device for checking radiation meters. It contains a radiation source, a shielded housing with a collimated channel, an attenuating filter, mechanisms for moving and fixing the position of the source, and an effective area (see Fig. 1). To simplify the design, increase the measurement range, and reduce the checking time, a liquid metal (e.g., Hg) is used as the attenuating filter. The radiation source is placed directly inside the filter and can be moved.

UDC: 621.039.55

Card 1/2

ACC NR: AP5025706

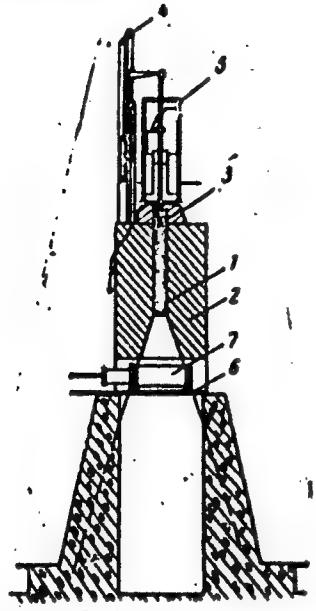


Fig. 1. 1 - Radiation source; 2 - shielded housing; 3 - liquid-metal attenuating filter; 4 - mechanism for moving source; 5 - mechanism for fixing source; 6 - effective area; 7 - sensing element of radiation meter.

Orig. art. has: 1 figure.

SUB CODE: 18/ SUBM DATE: 17Apr64

Card 2/2

L 12079-66 EWT(1)/FCC GW

ACC NR: AT5028665 SOURCE CODE: UR/2633/65/000/019/0191/0195

AUTHOR: Solov'yev, V. A. 30 B+1

ORG: Far Eastern Scientific Research Hydrometeorological Institute, Vladivostok (Dal'nevostochnyy nauchno-issledovatel'skiy gidrometeorologicheskiy institut)

TITLE: Thunderstorm activity in the Far East 12,44,55

SOURCE: Vladivostok. Dal'nevostochnyy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 19, 1965. Voprosy aerologii i sinopticheskoy meteorologii (Problems in aerology and synoptic meteorology), 191-195

TOPIC TAGS: diurnal variation, thunderstorm, storm, climatology, atmospheric disturbance, marine meteorology

ABSTRACT: Thunderstorm activity was characterized on the basis of direction finding observations. The study covered the period 1961-1962 for the area 30--55 N, 115--150 E, and was an extension of similar studies conducted in European Russia. The thunderstorm activity was studied for its annual and daily variations. Over land there were no thunderstorms from December through February, and 84% of the storms occurred from June through September. At sea, storms occurred each month, with the maximum of a less extreme variation in the fall-winter. A maximum daily activity was observed over the land in the evening. The observation region was divided into four sections for studying the duration of the storm period and the number of days with thunderstorms. One

Card 1/2 UDC: 551.594.2 (5-012)

L 12079-66

ACC NR: AT5028665 O

area, entirely over land, showed a typical continental pattern and gave good agreement between the direction-finding observations and weather station reports. Two areas had a mixed land-sea surface pattern and showed an intermediate thunderstorm pattern. Here correlation between the two types of data was poor due to the limited weather reporting system. The fourth area, entirely over water, showed a typical marine thunderstorm pattern and accounted for half of the storm-breeding centers of the entire region. This method is equally valid over land and sea. Orig. art. has: 1 figure and 4 tables.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

L 29142-66 EWT(1)/FCC GW

ACC NR: AP6018680 SOURCE CODE: UR/0050/65/000/010/0032/0034

AUTHOR: Solov'yev, V. A. (Candidate of physicomathematical sciences)

ORG: Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya)

TITLE: Diurnal and annual variation of thunderstorm activity in the North Atlantic and the seas of Western Europe and the Far East

SOURCE: Meteorologiya i gidrologiya, no. 10, 1965, 32-34

TOPIC TAGS: diurnal variation, storm

ABSTRACT: On the basis of an analysis of data from the network of stations in Great Britain and the Soviet Union for direction-finding of atmospherics for the years 1961-1963 this article gives the distribution (diurnal and annual) of thunderstorms for the region from 35° to 70° N and from 30° W to 30° E, the Norwegian Sea, North Sea, Baltic Sea and Mediterranean Sea and the North Atlantic, and 25° to 60° N from 120° to 155° E, the Sea of Okhotsk, Sea of Japan, Yellow Sea and East China Sea and part of the Pacific Ocean. For the different seas of western Europe there is a different annual variation of thunderstorm activity. For example, for the Norwegian Sea and the Northeastern Atlantic the maximum thunderstorm activity occurs in the cold half of the year. In the Norwegian Sea area 85% of all thunderstorms occur from October through March, and in the Northeastern Atlantic -- 70%. The mean an-

UDC: 551.594.21

Card 1/2

L 29140-66
ACC NR: AP6018680

nual number of thunderstorms for the Norwegian Sea is 7 per 100,000 km^2, whereas for the same area of the Northeastern Atlantic there are 100, over the North Sea -- 170, and over the Mediterranean -- 600. In the Mediterranean area the distribution of thunderstorms is almost uniform throughout the year. Over the Sea of Okhotsk, on the other hand, thunderstorm activity is confined to the warm months of the year; thunderstorm activity is 25 less frequent than over the North Sea, which can be attributed to the presence of the cold Kurile Current. Although the Sea of Japan is at the same latitude as the Mediterranean its thunderstorm activity is different: the distribution is not uniform and thunderstorms occur almost four times less frequently. In the Pacific area the activity resembles that of the Atlantic, probably due to accumulation of heat by the world ocean and the same mechanism of its distribution during the year at the same latitudes. Similar comparisons are made for the diurnal distribution. For those seas where the surrounding land exerts a great influence there is a diurnal variation of thunderstorms. Seas that adjoin the ocean feel no such influence. Orig. art. has: 4 tables. [JPRS]

SUB CODE: 04 / SUBM DATE: 02Feb65 / ORIG REF: 002 / OTH REF: 004

Card 2/2 cc

SOLOV'YEV, V.A.

Plastic interaction of vacancies with edge dislocations in the continuity theory. Fiz. met. i metalloved. 20 no.4:634-636 O '65. (MIRA 18:11)

1. Institut metallovedeniya i fiziki metallov i Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

SOLOV'YOV, V. A.

Solov'yov, V. A. "On the problem of the causes of castration of mares (sic)", Trudy Zhitomirsk. s. -kh. in-ta, Vol. 111, 1949, p. 91-96.

SO: U-4630, 14 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

CATEGORY : Farm Animals.
The Swine.

ABS. JOUR. : RZhBiol., No. 3. 1959, No.12069

AUTHOR : [illegible]
INST. : [illegible]
TITLE : The Influence of Protein Nutrition upon the Increase of Early Maturity in Pigs.

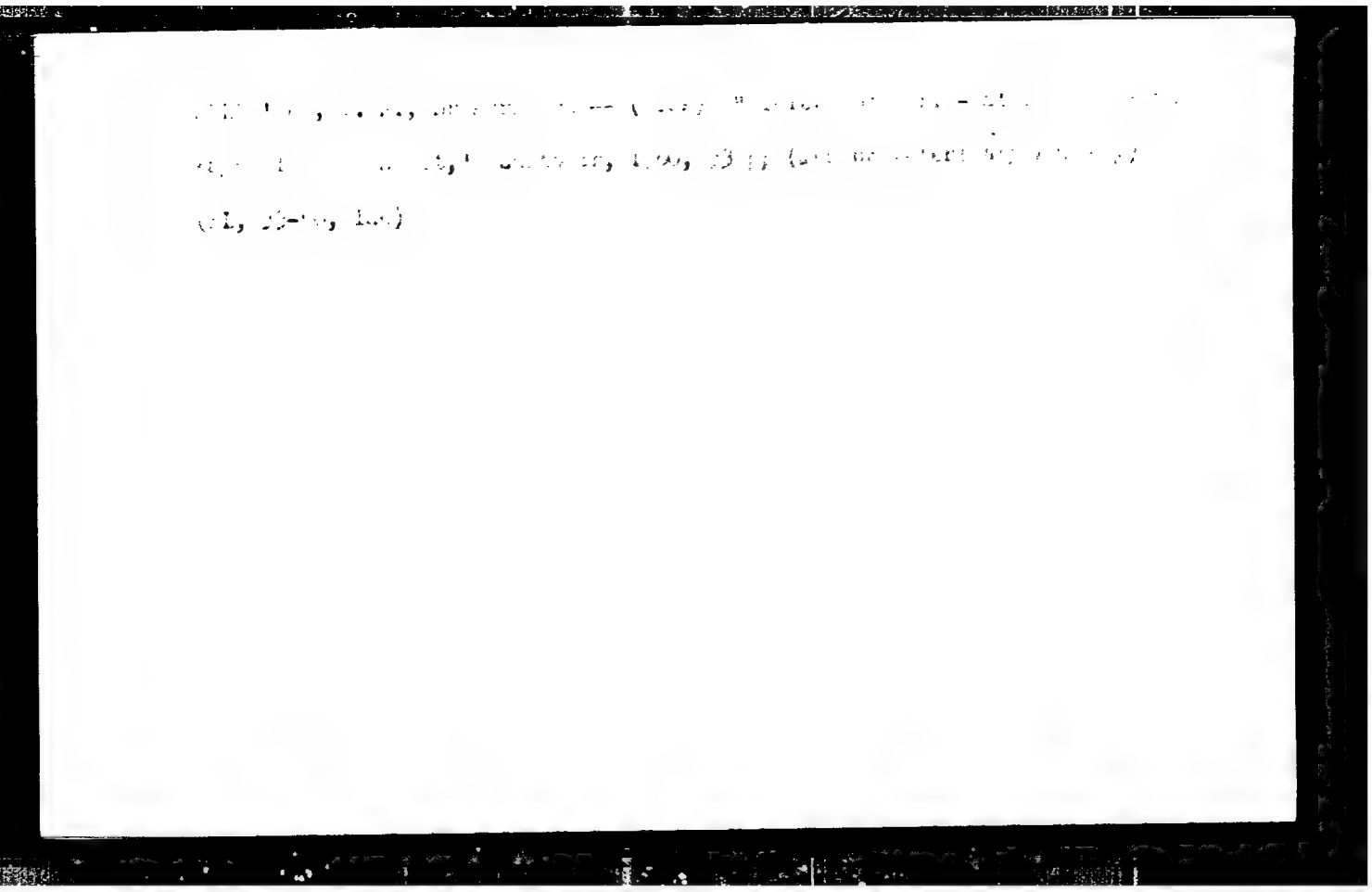
ORIG. PUB. : Nauchn. tr. Zhitomirsk. s.-kh. in-t, 1957, 4, 201-214.

ABSTRACT : Experiments were carried out on 3 groups of pigs (each of them consisted of the large white, Mirgorodskaya and local breeds). In the course of 12 months the piglets of the 1st group were given 138 kg of digestive protein, and 1,674 kg of feed units, while concentrates constituted 69 percent, and juicy feeds 22 percent of the ration's nutritive value; the piglets of the 2nd group were correspondingly given 73, 1,641, 20 and 76.5; of the 3rd group, 39, 784, 31 and 65. At the age of one

Card: 1/2

SOLOV'YEV, V. A. [redacted] Doc Agr Sci -- (diss) "Biology of the early maturing of hogs and [redacted] methods of modifying it." Mos, 1959. 33 pp (Min of Agr RSFSR. Mos Vet Acad), 160 copies (KL, 46-59, 138)

45



SOKOLOV, Viktor Alekseyevich

"The Biology of the Early Maturation of Pigs and Methods of Altering It";

dissertation for the degree of Doctor of Agricultural Sciences (awarded by the Timiryazev Agricultural Academy, 1962)

(Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2, 1963, pp 232-236)

L 24486-65 EWT(1)/EWG(v)/EEC(t)/EEC(b)-2/FCC Pe-5 RB/GW/WS

ACCESSION NR: AT5002954 S/2531/64/000/163/0076/0086

AUTHOR: Soloy'yev, V.A.

25
24
B+1

TITLE: Thunderstorm activity over the European part of the SSSR

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 163, 1964. Voprosy klimatografii (Problems in climatography), 76-86

TOPIC TAGS: thunderstorm, climatography, lightning, atmospheric turbulence, meteorological radar

ABSTRACT: For the purpose of obtaining data on thunderstorms in areas without meteorological stations, a network of stations has been established for the radio direction finding of atmospherics associated with thunderstorm activity. This network covers virtually the entire area of the Soviet Union and certain parts of foreign countries adjacent to the SSSR. Such observations have been made since 1957. This work has yielded a mass of data on thunderstorm distribution and intensity (observations are made eight times daily). The study was based on stations located in the European SSSR and Central Asia, supplemented by data from similar stations in Great Britain, and then compared with data from meteorological stations. All observations were averaged for 5-degree grid squares. Tables were prepared for the number of thunderstorms, number of days

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ACCESSION NR: AT5002954

with thunderstorms and duration of thunderstorms for each grid square. Data were analyzed for the June-August period for the area from 45 to 65°N and from 25 to 60°E. There was good agreement with available data from the British system. Figures 1 and 2 of the Enclosure show the maps of thunderstorm activity for the summers of 1960 and 1961; these differ greatly. The regional differences and change in pattern between the two years are discussed, although no generalizations can be drawn from such limited data. However, such maps are superior to those compiled from meteorological data because data are used for areas where no meteorological information is available. Diurnal variation of thunderstorm activity was also analyzed. Orig. art. has: 1 formula, 4 figures and 5 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main geophysical observatory)

SUBMITTED: 00 ENCL: 02 SUB CODE: ES

NO REF SOV: 003 OTHER: 004

Card 2/4

L 24486-65

ACCESSION NR: AT5002954 ENCLOSURE: 01

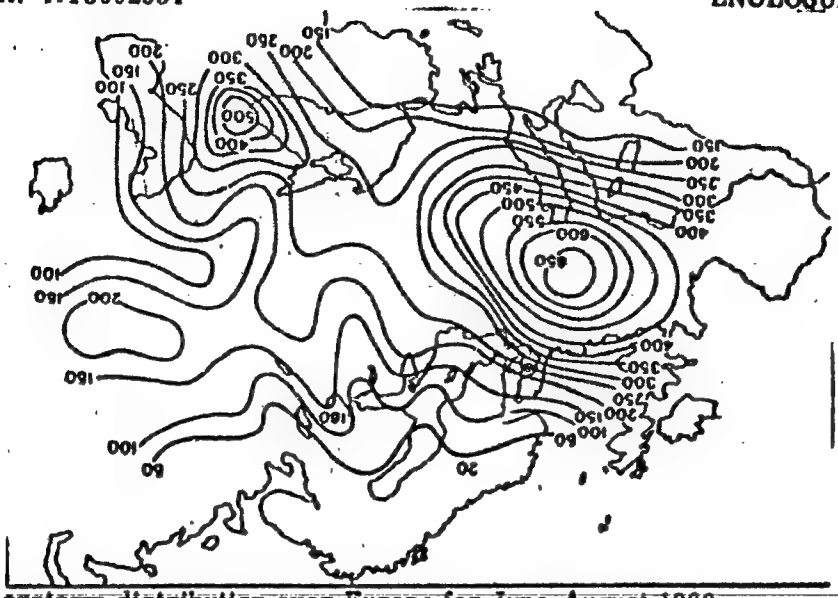

Fig. 1. Thunderstorm distribution over Europe for June-August 1960.

Card 3/4

L 24486-65

ACCESSION NR: AT5002954

ENCLOSURE: 02

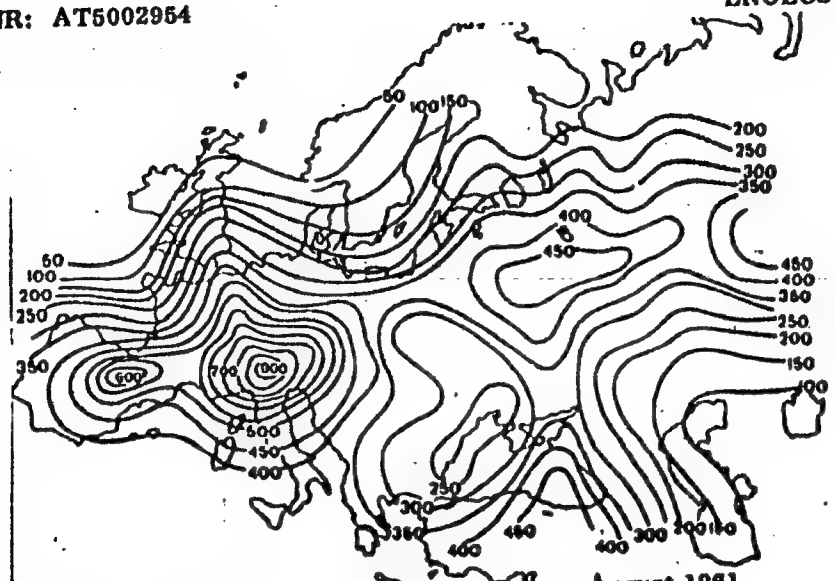

Fig. 2. Thunderstorm distribution over Europe for June-August 1961.

Card 4/4

SOLOV'YEV, V.A.

Causes of the discrepancy between atmospherics and weather conditions. Trudy GGO no.157:73-75 '64 (MIRA 17:8)

L 21799-65 EWT(l)/FCC ASD(a)-5/AFWL/SSD/AFETR/RAEM(a)/RAEM(i)/RAEM(j)/ESD(c)/ESD(gs)/ESD(t) GW

ACCESSION NR: AP5001815 S/0050/65/000/001/0030/0035

AUTHOR: Solov'yev, V. A. (Candidate of physico-mathematical sciences)

TITLE: Determining storm activity from direction-finding data on atmospherics

SOURCE: Meteorologiya i gidrologiya, no. 1, 1965, 30-35

TOPIC TAGS: atmospherics, direction finding

ABSTRACT: The data from synoptic charts represent a very small percentage of total land surface, and these are insufficient for predicting storms. For predictions at sea they are useless. The method of determining direction of atmospherics is unique and may be used for distances up to several thousand kilometers. The SSSR has 15 stations for atmospherics observation, arranged in three groups: European, Central Asian, and Far Eastern. The direction of atmospherics is determined by simultaneous observation at three or four points. Thus far, information on atmospherics has been used only for refining the position of fronts, for gaining some idea of storm conditions in regions without weather stations, and the like. The author attempts to use such data for delineating the characteristics of storm activity. Maps of storm activity were prepared on the basis of data from European stations for 1960 and 1961. Another map showing storm centers

Card 1/2

L 21799-65

ACCESSION NR: AP5001815

on the basis of atmospherics was also prepared. This map shows that the daily behavior of different centers distributed along lines of latitude varies, but is almost identical along meridians. It can be observed that storm maximums arrive earlier toward the east. On continents, in general, the storm-activity maximums arrive in 12-15 hours. This is apparently due to earlier heating of the land. The larger the number of water bodies in a region, the later the arrival of the maximums, coming as late as 18-21 hours. The author concludes that data on direction of atmospherics may more completely describe storm activity than data of weather stations. It is especially important to note that these data permit forecasting for the ocean as well as the land. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya (Chief Geophysical Observatory)

SUBMITTED: 04Feb64 ENCL: 00

SUB CODE: ES NO REF SOV: 003 OTHER: 000

Card 2/2

CA Solov'yev, V. A.

Simple method of measurement of the absorption of supersonic waves in strongly absorbing solid bodies. I. G. Mikhailov and V. A. Solov'yev. *Doklady Akad. Nauk S.S.S.R.* 70, 265-8(1950).—A prism of the solid examd. is immersed in H_2O; a supersonic beam is refracted through the prism, and the intensity of the refracted beam is measured with the aid of a suitable collector such as a radiometer or a piezoelec. quartz. The thickness x of the absorbing layer of solid is varied by displacement of the prism. The intensity of the transmitted beam is $I = Ie^{-\alpha x}$, where α = absorption coeff. of the solid, and the absorption coeff. of H_2O can be disregarded in comparison with α. The effect of reflection is eliminated automatically. Plots of log I as a function of x are linear. The exptl. error is about 10% with $\alpha \sim 0.1$ and about 5% with $\alpha \sim 1$. Detns. of α were made, in frequencies ν = 1.96, 2.19, 4.87, 6.48, and 6.[illegible] megahertz, on: rosin, α = 0.11$_5$, 0.17$_5$, 0.33, 0.45, polymethylmethacrylate, 0.33, 0.43, 0.68, 0.80, 0.91; polystyrene, 0.11, 0.14, 0.23$_5$, 0.33$_5$, 0.25; bitumen (softening temp. ~ 90°) 1.8, 2.4, 3.1, —, 3.9. Plots of log α as a function of log ν are linear for rosin and bitumen, but are distinctly curved convexly to the axis of ν for the 2 polymers. N. Thon

SOLOV'YEV, V. A.

USSR/Physics - Ultrasonic in Liquids May 53

"Absorption of Ultrasonics Waves in Liquids and the Molecular Mechanism of Volume Viscosity," I.G. Mikhailov and V.A. Solov'yev

Usp Fiz Nauk, Vol 50, No 1, pp 3-50

Study of theory of "Kirchner-Stokes" absorption coeff of ultrasonic waves in liquids indicates that molecular mechanism of vol viscosity is not yet clarified. Further development of theory of structural relaxation would be very useful (see J.J. Markham et al. Rev Mod Phys. 23, 353 (1951)).

261T100

MIKHAYLOV, I.G.; SOLOV'YEV, V.A.

Use of compound piezoelectric vibrators for studying the mechanical properties of polymers. Akust.zhur.1 no.4:343-347 O-D '55.(MLRA 9:2)

1.Leningradskiy ordena Lenina gosudarstvennyy universitet imeni A.A.Zhdanova.
(Oscillators, Crystal) (Polymers and polymerization)

SOLOV'YEV, V.A.

534.23 : 534.20

6086. THE THEORY OF THE ULTRASONIC INTERFEROMETER. V.A.Solov'ev. Akust. zh., Vol. 2, No. 3, 285-90 (1956). In Russian.

The ultrasonic interferometer is widely used for the measurement of velocity of sound in liquids and gases. Its use can be extended to the measurement of the absorption coefficients, providing absorption is not great. The author puts forward a new computational formula to be applied to the interferometer measurements in order to obtain the absorption coefficients. C.R.S.Manders

Leningrad State U.

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35565

Author: Solov'yev, V. A., Mikhaylov, I. G.

Institution: Leningrad University, Leningrad, USSR

Title: On the Theory of the Composite Piezoelectric Vibrator

Original Periodical: Izv. AN SSSR, ser. fiz., 1956, 20, No 2, 261-267

Abstract: Description of a method of investigating the mechanical properties of high polymers over a wide frequency range (10^4 - 10^5 cycles) with the aid of a composite piezoelectric vibrator. A bar made of the investigated material is glued to the piezoelectric bar in which oscillations of the required type are excited. The resonant frequency and the Q of the composite vibrator are then measured. The contribution of the piezocrystal to the parameters of the composite vibrator can be readily eliminated. The theory of the composite-vibrator is analyzed and equations are derived for calculating the complex modulus of elasticity of the

Card 1/2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35565

Abstract: investigated substance for the following 3 types of load of the piezocrystal: load on one side; the lengths of the piezocrystal and of the specimen are chosen aribtrarily. Load symmetrical -- 2 equal specimens of arbitrary lengths. Load on one side, but the length of the specimen is so chosen that its resonant frequency is approximately the same as the frequency of the crystal. A comparison is made of the 3 variants, principally from the point of view of their use for the investigation of mechanical properties (modulus of elasticity and absorption coefficient) of high polymers.

Card 2/2

SOLOV'YEV, V. A.

"Application of a Composite Piezoelectric Vibrator in the Study of Polymers,"

report presented at the Seminar on Physics, Application of Ultrasound, 23-26 Oct '57.

Leningrad Electro-Tech. Inst., Leningrad.

TITLE: Investigation into the mechanical properties of polyethylene and of paraffin by a composite vibrator method. (Issledovaniye mekhanicheskikh svoystv polietilena i parafina metodom sostavnogo vibratora.)

PERIODICAL: "Akusticheskiy Zhurnal" (Journal of Acoustics), 1957, Vol. III, No. 1, pp. 65 - 73, (U.S.S.R.)

ABSTRACT: Measurement of the dynamic Young modulus

$$E = E' + iE''$$

(where E' represents elasticity and the imaginary part E" represents the energy loss) in polymers by the composite vibrator method has been described in their earlier works by the authors 1), 2). The sample of material under test, in the form of a rod, is attached to the surface of an axially vibrating rod of piezo-electric material. The self-resonant frequency and mechanical losses in the sample are then determined from the change in the resonant frequency of the equivalent resistance of the vibrator. If resonant frequencies both of the piezo-electric rod and of the sample are nearly equal, a sample rod of a smaller diameter than that of quartz may be used 1), which permits wider application of the method, namely, for testing materials with low sound speed and high losses. In the present article, the method is applied to the investigation of mechanical properties of polyethylene and paraffin (used for condensers filling, mean molecular, cryosopic in benzole weight 490) in a wide temperature range,

Card 1/3

Investigation into the mechanical properties of polyethylene and of paraffin by a composite vibrator method. (Cont.)

-165 to + 90 °C, in which the sound velocity drops to the order of 250 m/sec. Measurements were made at 40.0, 60.5, 75.0 and 100.3 kc/s, in a thermostatically-controlled (to within 0.1 ÷ 0.3 °C) ambience. The self-resonant frequencies of samples were within 10% of the frequency of the quartz. Results are presented as graphs of E', E" and of the logarithmic decrement as functions of the temperature.

A peculiarity of the curves of temperature dependence of the sound velocity, both of polythene and paraffin is a very rapid fall of the velocity with temperature. Curves for E" (energy losses) show 2 distinct broad maxima. Although their positioning is not accurately determined and the temperature interval rather narrow it can be reasonably firmly established that these maxima, when frequency is increased, tend to shift towards the high temperature region, which implies that they are of relaxation origin. Comparison with dielectric measurements shows that the form of relaxation spectra in both cases differs, though the positioning regions coincide very well. No dispersion can be observed, which cannot be explained from the point of view of relaxation theory. The results for polyethylene are largely in accordance with results obtained by others. From theoretical considerations, a third maximum should be expected for E" in the investigated temperature

Card 2/3

Investigation into the mechanical properties of polyethylene and of paraffin by a composite vibrator method. (Cont.) 46-1-8/20

range, but it is probably masked by the too small value of the investigated moduli.
5 graphs are included. There are 16 references, of which 7 are Russian.

ASSOCIATION: Leningrad State University (Leningradskiy Gosudarstvennyy Universitet.)

SUBMITTED: May 10, 1956.

AVAILABLE:

Card 3/3

SOLOV'YOV, V.A., Cand Phys-Math Sci --(diss) " Study of dynamic ~~study of elastic~~ properties of certain polymers by the method of a compound piezoelectric vibrator." Len, 1958. 9 pp (Len Order of Lenin State Univ im A.A.Zhdanov. Physics Faculty). 100 copies (KL, 20-58, 93)

AUTHORS: Mikhaylov, I.G., Solov'yev, V. A., Syrnikov, Yu. P.

TITLE: The Main Problems of Contemporary Molecular Acoustics (Osnovnyye problemy sovremennoy molekulyarnoy akustiki)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol 4, Nr 3, pp 211-222 (USSR)

ABSTRACT: This is a review of the present state of molecular acoustics. Both Western and Russian work is considered. In view of the relative simplicity of ultrasonic methods the velocity of sound has been measured in a very large number of liquids. The velocity has been correlated with various macroscopic and microscopic properties of liquids and various espirical rules have been suggested. Among these rules is the one due to Rao. The authors point out that in their opinion Rao's rule does not summarise any special molecular mechanism. This is shown above all by the approximate nature of this result and its limited range of applicability. The correct way of developing theoretical molecular acoustics would be to calculate the compressibility and hence the velocity of sound, rather than to try and find a theoretical foundation for Rao's law. However, as is well known, this is very difficult and has not as yet been done. Some attempts have been made to calculate the velocity of sound directly from

The Main Problems of Contemporary Molecular Acoustics

molecular considerations (Refs.5 and 7) but in these attempts the velocity was obtained not through a solution of the kinetic equation but by using very approximate models. These calculations give the right order of magnitude for the velocity of sound but they are quite useless in providing information on the actual structure of the particular liquid. Relaxation theory points to a connection between volume viscosity and irreversible processes leading to equilibrium. Some work on this has been done by Mandel'shtam and others (Refs.15 and 17). In the authors' opinion, Frenkel's theory gives the most correct physical picture of the structure of liquids. Unfortunately, at the present time the mathematical apparatus of this theory is not sufficiently developed. The authors consider that a development of Frenkel's theory in general, and its application to the calculation of compressibilities in particular, would be of major value in the present context. Among the problems discussed in the present review is the problem as to whether relaxation processes are

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The Main Problems of Contemporary Molecular Acoustics

the only reason for the existence of volume viscosity. The authors consider that it is. On the experimental side it is pointed out that in many experiments on the absorption of sound in liquids the intensity of the ultrasonic waves was not taken into account. On the other hand, it has been established (Refs.52-54) that the coefficient of absorption does depend on the intensity even for relatively low amplitudes. Another experimental point is that measurements of absorption of ultrasonic waves should be carried out in a wider frequency range. There are no figures or table, 57 references, of which 26 are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy Universitet (Leningrad State University)

SUBMITTED: September 14, 1957.

1. Acoustics 2. Sound--Velocity 3. Liquids--Acoustic properties

Card 3/3

54-1-4/17

AUTHOR: Solov'yev, V. A.

TITLE: The Dynamic Viscoelastic Properties of Polyethylene of Low Pressure (Dinamicheskiye vyazkouprugiye svoyatva polietilena nizkogo davleniya)

PERIODICAL: Vestnik Leningradskogo Universiteta Seriya Fiziki i Khimii (Nr 1, 1958, Nr 4,

ABSTRACT: In addition to previous investigations (Ref.1), measurements of the dynamic Young's modulus and internal friction are carried out in one more sample of high-pressure polyethylene (PE_{hp}), and three different samples of low-pressure polyethylene (PE_{lp}). The method of composite piezoelectric resonators was employed. The curves of the temperature dependence of sound velocity c, acoustic reactance X, dynamic viscosity η, and the logarithmic decrement Λ at 75 kg/sec are given within the temperature range of from -160° C up to nearly melting point. The values of c in PE_{hp} are higher than in PE_{lp}. The inflection on velocity

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curves in the region of the low-temperature loss peak is more pronounced except in one (brittle) sample; the peak itself is somewhat higher. The second loss peak, which is near room temperature, is shifted towards higher temperatures (except in the case of a brittle sample). Measurements carried out at different frequencies (4o to 1oo kc/sec) with a sample of PE_{lp} show the frequency shift of the low-temperature loss peak (activation energy is of the order 6-8 kcal/mol), but no dispersion of ε is observed. Low-pressure polyethylene differs from high-pressure polyethylene by the low degree of ramification of chains (the number of groups CH_3 per 1oo groups CH_2 is lower by a manifold in low-pressure polyethylene) and by the correspondingly higher degree of crystallinity (7o-8o % against 5o-6o % if crystallinity is estimated according to density). In this connection it was interesting to compare the dynamic properties of high- and low-pressure polyethylene. Similar investigations were carried out by numerous authors at frequencies of ~ 1 c (Ref. 2), 15o-15oo c (Ref. 3), 5 - 3kc (Refs.4-5). In these

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works the resonance method was employed and frequency was modified together with temperature). In the work (Ref.6) carried out at 2 kc also the dielectric losses on the frequency of form 1,5 and 10 kc were investigated. The low-pressure polyethylene investigated here was produced by NIIPP and EZ. The author thanks N.N. Andreyeva for the samples and values placed at his disposal (the latter appearing in the 4 first columns of the table). The sample of low-pressure polyethylene - 2 and low- pressure polyethylene - 1, which had been previously investigated, (Ref.1) is an industrial product of the Chemical Kombinat in Okhta. The author thanks Ye. Kh. Gel'gren for the samples and for being told their molecular weights, and he also thanks I. G. Mikhailov for valuable advice given. There are 1 figure, 1 table, and 9 references, 2 of which are Slavic.

SUBMITTED: November 15, 1957

AVAILABLE: Library of Congress

Card 3/3 1. Polyethylene-Properties-Analysis

24(1) SOV/46-5-3-28/32

AUTHOR: Solov'yev, V.A.

TITLE: On the Allowance for Reflection at the Radiator in the Theory of an Ultrasonic Interferometer (Ob uchete otrazheniya na izluchatele v teorii ul'trazvukovogo interferometra)

PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 3, p 382 (USSR)

ABSTRACT: V. Ilgunas and E. Jaronis (Ref 1) state that Hubbard's interferometer theory (Ref 2) is in error since Hubbard assumes that the secondary waves are totally reflected from the radiator surface. The author points out that when secondary waves are reflected from a radiating surface its vibrational velocity V is altered. Consequently either a new expression for this velocity should be used or additional pressure, which would need to be applied to the radiating surface to keep its vibrational velocity equal to its original value V, should be included in the expression for the total pressure on the radiating surface. Both these alternatives are eqqivalent to an assumption that the secondary waves are totally reflected from the radiating surface. Hubbard's formula is also confirmed by an exact solution of the interferometer problem given by Mason (Ref 3) and Solov'yev and Mikhaylov (Ref 4). There are 5 references, 2 of which are Soviet, 2 English and 1 other.

Card 1/1

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

S/081/60/000/007/012/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 7, p. 623, # 29428

AUTHOR: Solov'yev, V. A.

TITLE: The Use of a Composite Piezoelectric Vibrator for Investigating the Mechanical Properties of Polymers

PERIODICAL: Tr. Seminara po fiz. i primeneniyu ul'trazvuka, posvyashch. pamyati prof. S. Ya. Sokolova, Leningrad, 1958, pp. 168-172

TEXT: Sound velocity and the reactive portion of the specific acoustic impedance (depending on temperature) in polymethyl-methacrylate (I) were measured for the purpose of checking the applicability of linear approximation when analyzing a composite piezoelectric vibrator of variable cross section. Cases were studied when the sections of the rod of I and of the piezo-quartz rod were equal and when they were different. The method of measurement and the calculational formulae were described in an article published in RFZHFiz, 1956, No. 8, # 22 568. It is shown that when the natural frequencies of I and the piezo-quartz rod are the same, the linear approximation is justified with the

Card 1/2

S/081/60/000/007/012/012
A006/A001

The Use of a Composite Piezoelectric Vibrator for Investigating the Mechanical Properties of Polymers

boundary condition: the equality of total forces acting on the boundaries of the rods. Linear approximation does not provide for a sufficient accuracy in the case of a composite vibrator with rods of variable cross sections, if the resonance frequencies of the rods do not approach the operating frequency of the vibrator. It is concluded that the described method can be used for the study of polymers if the natural frequencies are equal, and that it is practically the only method in a frequency range of 10^4 - 10^5 cycles.

T. Khazanovich

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

26396
S/046/61/007/003/002/004
B104/B201

24.6111

AUTHOR: Solov'yev, V. A.

TITLE: Relaxation of excitation of molecular vibration levels

PERIODICAL: Akusticheskiy zhurnal, v. 7, no. 3, 1961, 337 - 344

X

TEXT: The establishment of energy equilibrium between the degrees of freedom of translation and the degrees of freedom of inner molecular vibrations when taking an excitation of higher levels into account is described by a large number of relaxation times. To calculate them, it is necessary to introduce "generalized coordinates" in which the system of equations of excitation reactions is split into independent equations. If the probability of transitions between the levels has the same form as that of dipole transitions with emission, this problem can be solved. The present paper offers an exact solution for isothermal relaxation and a solution in acoustic approximation for relaxation at a variable temperature. If n_1, n_2, n_3, ... molecules of a gas or a liquid are in vibrational states with the energy levels 0, $h\nu$, $2h\nu$, $3h\nu$, ..., the equation of excitation reaction can be written as

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26396
S/046/61/007/003/002/004
B104/B201

Relaxation of excitation ...

$$\dot{n}_j = -\sum_{\substack{k=0 \\ k\neq j}}^{\infty} a_{jk} n_j + \sum_{\substack{k=0 \\ k\neq j}}^{\infty} a_{kj} n_k \qquad (j = 1, 2, 3, \ldots.)$$

To solve the problem, the "generalized coordinates" $\{_m$ must then be found as linear combinations of the "natural coordinates" n_i, all of which obey the $\dot{\{}_m = -\frac{1}{\tau_m}(\{_m - \{^e_m)$ $(m = 1, 2, 3, \ldots)$ by Mandel'shtam and Leontovich. Here, $\{^e_m$ denotes the equilibrium value of displacement $\{_m$, τ_m being the relaxation time of such displacement. This equation can be easily solved if external conditions (such as temperature) are constant. In this connection, the number of "generalized coordinates" equals the number of independent variables which describe the system. This number is infinitely large in the present case, and so is the number of relaxation times. If only excitations of the first vibration level are taken into account in the simplified theory by Kneser (Ann. Phys., 1933, 16, 5, 337) and Rutgers (Ann. Phys., 1933, 16, 5,

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Relaxation of excitation ...

350), only one relaxation time will be found in the experiment. These circumstances are examined more closely, and the coefficients a_{jk} derived by L. Landau and Ye. Teller (Phys. Z. Sowietunion, 1936, 10, 1, 34) and by R. N. Schwartz et al. (J. Chem. Phys., 1952, 20, 10, 1591 - 1599) are shown to deviate appreciably. The author's calculations are based upon the model by Landau and Teller. For (1), equation

$\dot{n}_j = -\left\{jB+(j+1)A\right\} n_j + jAn_{j-1} + (j+1)Bn_{j+1}$ $(j=1,2,3,\ldots)$ (5) is formulated, which obtains in generalized coordinates, the form

$\dot{\xi}_m = \sum_{k=1}^{m} \frac{m!}{k!(m-k)!} \left(\frac{-A}{B-A}\right)^{m-k} \sum_{j=k}^{\infty} \frac{j!}{k!(j-k)!} n_j$, and, in natural coordinates the form

$n_j = \sum_{k=j}^{\infty} (-1)^{j+k} \frac{k!}{j!(k-j)!} \sum_{m=1}^{k} \frac{k!}{m!\,(k-m)!} \left(\frac{A}{B-A}\right)^{k-m} \xi_m$. From these equations, equations of the form (2) with relaxation times $\tau_m = 1/m(B-A)$

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Relaxation of excitation ...

are obtained for each ξ_m. The equations obtained here allow problems of isothermal relaxation to be solved. The Boltzmann distribution is discussed for an example. The application of results to the solution of acoustic problems is dealt with next. The coefficients A and B in (5) are not constant in this case. The sound-wave amplitudes are assumed to be small, which permits (5) to be linearized. The representation of the relaxation equation in diagonal form is given in the appendix. I. G. Mikhaylov is thanked for his advice, and A. G. Vlasov for a consultation. There are 6 references: 2 Soviet-bloc, and 4 non-Soviet-bloc. The references to English-language publications read as follows: R. N. Schwartz et al., Calculation of vibrational relaxation times in gases. J. Chem. Phys., 1952, 20, 10, 1591 - 1599; E. W. Metroll, K. E. Shuler. Studies in nonequilibrium rate processes. I, The relaxation of a system of harmonic oscillators. J. Chem. Phys., 1957, 26, 3, 454 - 464.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: November 17, 1960

Card 4/4

SOLOV'YEV, V.A.

"Absorption and dispersion of ultrasonic waves" by K. F. Herzfeld, T. A. Litovitz. Reviewed by V. A. Solov'ev. Akust. zhur. 7 no.1:120-121 '61. (MIRA 14:4)

(Ultrasonic waves)

(Herzfeld, K.F.) (Litovitz, T. A.)

S/843/62/000/000/005/010
D207/D308

AUTHORS: Gotlib, Yu.Ya., Salikhov, K.M. and Solov'yev, V.A.

TITLE: Theory of the absorption of ultrasound in polymer solutions

SOURCE: Stroyeniya i fizicheskiye svoystva veshchestva v zhidkom sostoyanii; materialy IV soveshch. po.probl. zhidkogo sost. veshchestva, v Kiyeve 1959 g. Kiev, Izd-vo Kiev. Univ., 1962, 85-91

TEXT: Experimental results for the absorption of ultrasound in polyisobutylene solutions in benzene (3 - 15% conc.) are accounted for by the following model. Polymer molecules are represented by elastic filaments immersed in continuous viscous medium. The filaments execute Brownian movements and assume various bent-shapes. Van der Waals interactions (and dipole interactions in polar polymers) between the filaments make them behave as a network joined by Van der Waals bonds. Friction with the solvent and between the individual segments of the neighboring polymer filaments are

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Theory of the absorption ...

allowed for. Relaxation of the viscosity is included by assuming a nearly continuous spectrum of relaxation times. This model accounts for (1) the lack of correlation between the viscosity and the absorption coefficient of ultrasound in a polymer solution, 2) the reduction of the ratio α/ν^2 (α is the absorption coefficient and ν is the frequency) with increase of the ultrasound frequency, and 3) the reversible changes of structure appearing at high sound intensities. The theory is presented as a physical description of the mechanisms involved, with a minimum of mathematical treatment. There are 2 figures and 1 table.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds, AS USSR)

SOLOV'YEV, V.A.

Relaxation of intermolecular oscillations in gases and liquids. (MIRA 16:1)
Ukr. fiz. zhur. 7 no.8:854-860 S '62.

1. Leningradskiy universitet.
(Molecules) (Oscillations) (Quantum theory)

MIKHAYLOV, I.G.; SAVINA, L.I.; SOLOV'YEV, V.A.; SYROVA, M.N.

Absorption of ultrasonic waves in thiokols. Akust. zhur. 9 no.4: 460-465 '63. (MIRA 17:3)

1. Leningradskiy gosudarstvennyy universitet.

S/046/63/009/001/013/026
B104/B186

AUTHOR: Solov'yev, V. A.

TITLE: Adiabatic relaxation in a system of harmonic oscillators

PERIODICAL: Akusticheskiy zhurnal, v. 9, no. 1, 1963, 72 - 75

TEXT: Making use of formulas and results of previous papers (V. A. Solov'yev, Akust. zh., 1961, 7, 3, 337 - 344; A. I. Osipov, Dokl. AN SSSR, 1960, 130, 3, 523 - 525) the Osipov equation is solved without restrictions. The spectrum of relaxation time for the adiabatic process of establishing an equilibrium in the energy distribution on the molecule vibration levels is calculated. In this calculation, energy transfer between the oscillating and the progressive degrees of freedom and between the excited states (resonance transfer) of different molecules are assumed. The transformation to normal coordinates defined in the previous papers has the same form as is obtained with isothermal relaxation in a system without resonance transfer. The natural acoustically active coordinate is the number of vibrational quanta in the system.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

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L 51054-65 EWT(l)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EED(b)-3 Pc-4/Pr-4/
Pu-4 IJP(c) WW/RM S/ 56
ACCESSION NR AM5001446 BOOK EXPLOITATION 55
B1

Mikhaylov, Igor' Georgiyevich; Solov'yev, Viktor Aleksandrovich; Syrnikov, YUriy Pavlovich

Principles of molecular acoustics (Osnovy molekulyarnoy akustiki), Moscow, Izd-vo "Nauka", 1964, 514 p. illus., biblio., index. 4,500 copies printed.

TOPIC TAGS: acoustics, sound wave, thermodynamics, relaxation process, polymer, sound absorption, acoustic property

TABLE OF CONTENTS (abridged):

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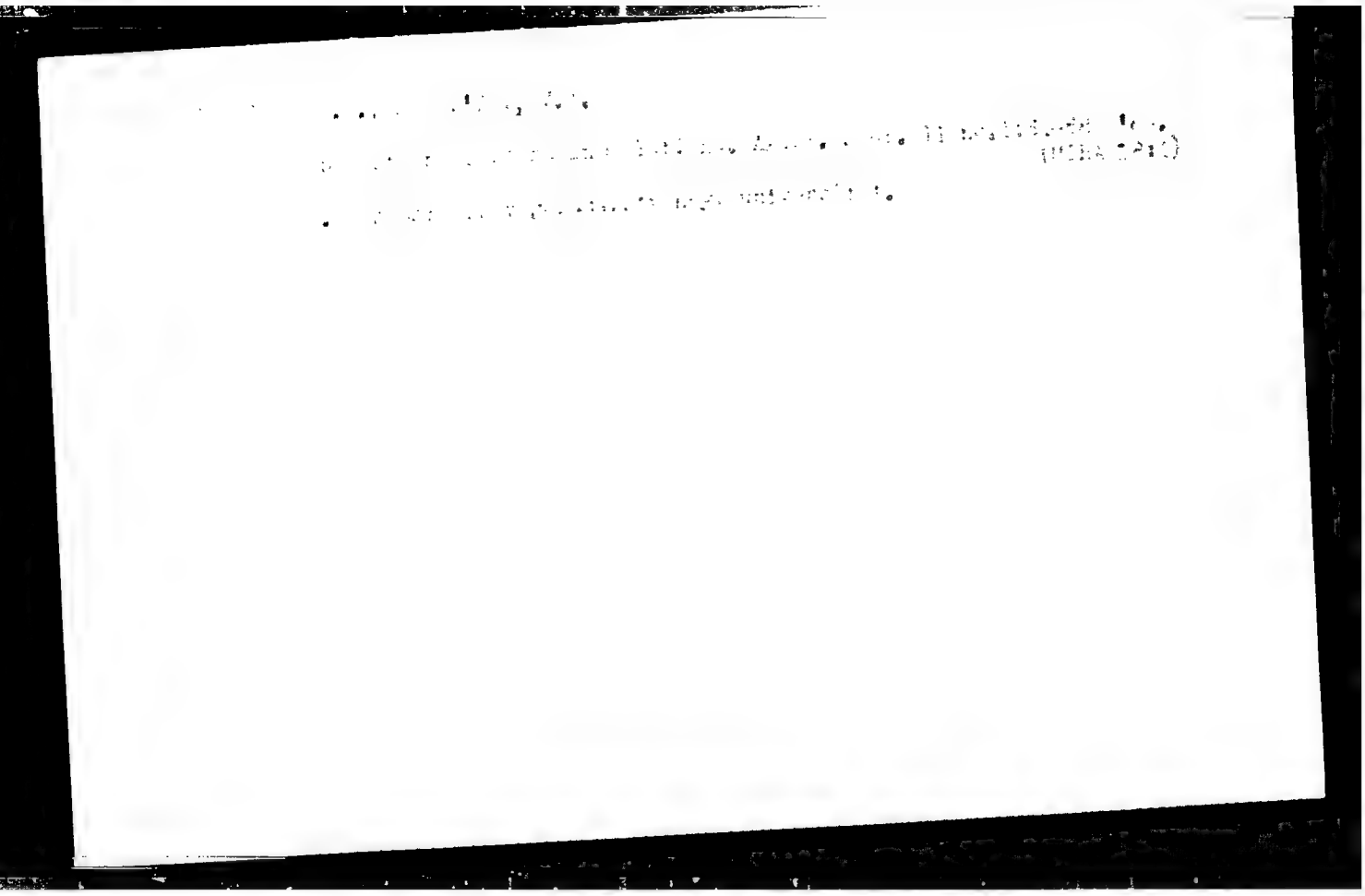
SUBMITTED: 22Jul64 SUB CODE: GP

NO REF SOV: 215 OTHER: 487

Card 2/2



L 5067-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(l) WW/RM UR/0089/65/019/002/0201/0203
ACC NR: AP5022645 539.16.07

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. N.; Solov'yev, V. A.

TITLE: The use of polyethylene pipes in pipelines of dosimetric air sampling system

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 201-203

TOPIC TAGS: nuclear reactor, atomic energy plant equipment, air pollution control

ABSTRACT: The radioactive-air samplers are usually equipped with pipelines made of aluminum or stainless steel pipes. The possibility of their replacement by non-corrosive polyethylene pipes is discussed. The authors describe their experiments with the polyethyline pipes having a 20 mm diameter and 4 mm wall thickness. The results of their tests showed that the polyethylene pipes could be used at temperatures up to 60 C, pressures up to 3 kg/sq cm and rarefactions of 600 mm Hg. At the beginning of 1962, the air sampling pipelines of the VVR-M reactor were equipped with polyethylene pipes and tubes. Their total length was about 3000 m. No trouble was experienced during two years

Card 1/2 090/0453

L 5067-66

ACC NR: AP5022645

of operation of this stationary dosimeter system at the Physicotechnical Institute im. A. F. Ioffe of the SSSR Academy of Sciences. Orig. art. has: 1 photo showing the mounted pipes.

ASSOCIATION: none

SUBMITTED: 05Sep64 ENCL: 00 SUB CODE: NP, MT

NO REF SOV: 000 OTHER: 000

Card 2/2

ACC NR: [illegible] SOURCE CODE: UR/0126/66/022/006/0865/0870

AUTHOR: Lyubov, B. Ya.; Solov'yev, V. A.

ORG: TsNIIChERMET im. I. P. Bardin

TITLE: Calculating the diffusion growth rate of a pore under the action of applied stresses

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 6, 1966, 865-870

TOPIC TAGS: diffusion, porosity, polycrystal, crystal vacancy, plastic deformation, metal grain structure

ABSTRACT: It is experimentally known (Rozenberg, V. M., et al. FMM, 1966, 22, 438) that the application of relatively small stresses at high temperatures causes the growth of macroscopic pores at the grain boundaries of Cu polycrystals, chiefly owing to the diffusion of vacancies from the material to the pore. Two possible interpretations of this process are analyzed: 1) diffusion of vacancies into the pore because they attain their equilibrium concentration earlier at the surface of the pore than in the material; and 2) vacancy supersaturation of the material owing to plastic deformation. The kinetics of pore growth in the presence of applied stresses is analyzed and it is shown that changes in equilibrium concentration owing to elastic

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stresses alone are not enough to assure the observed growth rate of the pore. Plastic deformation, on the other hand, leads to an increase in the concentration of vacancies in the material, thus leading to an excess concentration of vacancies and hence interpretation 2) appears to be more probable: supersaturation with vacancies of the material owing to plastic deformation is responsible for pore growth. It is worth noting that even a small increase in the diffusion coefficient D can markedly reduce the extent of vacancy supersaturation needed to cause pore growth. At the same time, plastic deformation can markedly affect D. Thus the above interpretation accounts for the experimentally observed growth rates in the presence of a reasonably moderate degree of supersaturation. In the general case, particularly during the initial stage of the process (small pores), allowance must also be made for the additional transport of vacancies along the grain boundaries of the polycrystal. Orig. art. has: 27 formulas.

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SOLOV'YEV, V.A.

Structural position of the Chirkovskaya Depression in the general system of depressions of the Minusinsk intermontane trough. Geol. i geofiz. no.11:49-56 '60. (MIRA 14:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Minusinsk Basin--Geology, Structural)

PARFENOV, L.M.; SOLOV'YEV, V.A.; BOROVIKOV, A.M.

Tectonic terminology. Geol. i geofiz. no.9:118-123 '61.
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1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

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Genetic relationship between the Cenozoic and Mesozoic troughs in western Transbaikalia and the fault systems of different ages. Geol. i geofiz. no.4:79-87 '63. (MIRA 16:10)

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Recent data on the deep-seated structure of the Lake Baikal region. Dokl. AN SSSR 151 no.5:1162-1163 Ag '63. (MIRA 16:9)

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2. Chlen-korrespondent AN SSSR (for Kosygin).
(Baikal Lake region—Electromagnetic prospecting)

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Reviews and discussions. Izv. AN SSSR. Ser. geol. 30 no.6: 118-126 Je '65. (MIRA 18:6)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk (for Solov'yev). 2. Kiyevskiy gosudarstvennyy universitet, Kiyev (for Eynor).

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Thunderstorm activity in the region of the northeastern Atlantic and western Europe according to data on atmospherics. Trudy GGO no.177:31-36 '65. (MIRA 18:8)

MIKHNO, N.P.; SOLOV'YEV, V.A.

Tectonic conditions governing the association of Mesozoic formations in western Transbaikalia. Geol. i geofiz. no.10: 45-54 '65. (MIRA 18:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted March 16, 1964.

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Thunderstorm activity of the Far East. Trudy Dal'nevost. NIGMI no. 19:191-195 '65 (MIRA 19:1)

AFANAS'YEV, Yu.I.; BASHARIN, A.K.; BASHARINA, N.P.; VOTAKH, O.A.; SOLOV'YEV, V.A.; KRASIL'NIKOV, B.N., otv. red.; PAPENOV, L.M., otv. red.

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[Manufacture and introduction of multipurpose attachments for machining compound parts] Izgotovlenie i vnedrenie universal'nykh prisposoblenii dlia obrabotki slozhnykh detalei. Moskva, Proftekhizdat, 1961. 47 p. (MIRA 15:6)
(Machine tools--Attachments)

PASHKOV, V.Ye.; PAVLENOV, A.P.; SOLOV'YEV, V.A.; [illegible]LOV, A.I.

Selection of the optimum magnitude of the pressure area in NSh-32 and NSh-46 gear pumps. Trakt. i sel'khozmash. 32 no.6:14-15 Je '62. (MIRA 15:6)

1. Moskovskiy zavod gidroagregatov.
(Tractors--Equipment and supplies)

OSNAS, Ya.V.; SOLOV'YEV, V.A.

Repairing plane-parallel end measuring rods. Izm. tekh. no.4:39-42 Jl-Ag '57. (MLRA 10:8)

(Weights and measures--Repairing)

SOLOV'YEV, V.A.

Lapping-in of plane-parallel end measures. Izm.tekh. no.4:1-4 Ap '60. (MIRA 13:8)
(Length measurement)

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D041/D006

25(6)

AUTHOR: Solov'yev, V.A.

TITLE: Devices for Checking Part Dimensions During the Machining Process on Surface-Grinding Machines

PERIODICAL: Standartizatsiya, 1960, Nr 3, pp 48-49 (USSR)

ABSTRACT: The Komitet standartov, mer i izmeritel'nykh priborov (Committee of Standards, Measures, and Measuring Instruments) has approved the "GOST 9376-60" standard for devices checking the dimensions of parts being machined on surface grinding machines. The standard fixes 3 types of device: for automatic, semi-automatic, and visual checking. For automatic and semi-automatic checking, the use of inductive electric contact or pneumatic pickups is foreseen. In the case of visual checking the devices may be equipped with tooth-lever measuring heads, dial indicators, or special built-in meters. The new standard obliges machine building plants to raise the accuracy of surface-grinding

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Devices for Checking Part Dimensions During the Machining Process on Surface Grinding Machines

machines, and instrument plants to supply the metal working industry with high-stability devices.

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SOLOV'YEV, V.A.

Ruler for accurate measurement of external angles. Standartizatsiia 25 no. 5:55-56 My '61. (MIRA 14:5)
(Rulers (Instruments))

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Cand Biol Sci - (diss) "Effect of Cl^- and SO_4^{--} ions on the nitrogen metabolism of glycophytes and halophytes." Rostov-na-Don, 1961. 16 pp; (Rostov State Univ); 150 copies; price not given; (KL, 6-61 sup, 209)

BARYSHNIKOV, F.A.; SOLOV'YEV, V.A.; KOVRIZHNYKH, Yu.P.

Interrelation between the petrographic and mineral composition and the germanium content of some kinds of coal. Trudy Inst. gor. dela. Sib. otd. AN SSSR no.3:252-265 '60. (MIRA 14:4)
(Coal—Analysis) (Germanium—Analysis)

SOLOVYEV, V.A.

USSR/Biology - Botany

Card 1/1 : Pub. 22 - 44/46

Authors : Solovyev, V. A.

Title : Effect of volatile phytoncides on the germination of pollen

Periodical : Dok. AN SSSR 97/4, 741 - 744, Aug 1, 1954

Abstract : The effect of volatile phytoncides on the germination of alfalfa pollen, is explained. Four USSR references (1946-1951). Tables.

Institution : The A. M. Gorkiy State University, Molotov

Presented by: Academician A. L. Kursanov, March 22, 1954